King County Office of

INFORMATION RESOURCE MANAGEMENT

LSJ Integration Project
Strategic Planning Stage
Evaluation Phase
Evaluation Guidance Document

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1.0 INTRODUCTION

1.1 PROJECT OBJECTIVES

Members of the King County Law, Safety and Justice (LSJ) community believe that it is in the interest of public safety to make relevant information available to decision makers and law enforcement officers in a timely, efficient, and accurate manner. Additionally, the LSJ agencies wish to share information with external agencies, including municipal, state, and federal law enforcement officials, in accordance with several ordinances and laws, and wish to manage and control costs associated with the processing and administration of criminal justice cases.

The objective for the LSJ integration project is to identify, develop, and implement both operational and technical solutions that will improve the activities of the Law, Safety, and Justice agencies within King County. Integration is expected and will occur on at least three different operational levels:

1. Point-to-point data sharing between IT systems.

2. Operational integration or collaboration between IT systems.

3. Consolidation of manual activities (intra- and inter-agency), which may or may not require support from IT systems.

1.2 PROBLEM AND NEED SUMMARY

The current technical environment that supports the county's LSJ operations involves over 35 disparate applications, operating in over a dozen different combinations of OS/platform/language/database schema, and managed by seven autonomous IT organizations. The county uses additional applications that are run and hosted by both the state and federal governments, and interacts daily with approximately 41 municipal governments.

During the operational lifecycle of a criminal case, information is collected, analyzed, and passed along based on events and business rules, and corresponding to the responsibilities of the various LSJ agencies. Presently, this movement of information is largely paper-based and manual, information is typically re-entered, and access to other agency applications is restricted for various reasons.

Due to the organizational structure and technical infrastructure of the overall LSJ operation, changes and improvements – especially those involving coordinated operations among multiple agencies – are difficult to implement.

As a result of these general issues and the operational goals of the LSJ agencies, King County requires a technical solution that provides a "hub-and-spoke" integration infrastructure. This solution would support data sharing, data access, and application extension. The solution would be able to access multiple applications and data sources – both within and external to the county – with

limited new functional requirements being placed upon the applications. This solution would also support an application development environment, whereby the county could leverage and extend its investment in the existing technology base, while developing new capabilities.

1.3 EVALUATION OBJECTIVES

The objective of the Evaluation Phase of this project is to review various technical alternatives for supporting the goals of the project. This will include aligning capabilities to project opportunities, and broadly estimating costs. The results of this evaluation will be:

- A general understanding of various technology and vendor alternatives
- The qualification of several vendors to participate in a future RFP process
- Refinement of the goals and expectations for the project

The purpose of this document is to provide general information and guidance to selected vendors as they provide information to King County about their technical solutions. This document does not represent final requirements, or directly align to any evaluation criteria that will be used in the future selection process.

2.0 GENERAL REQUIREMENTS

King County's evaluation efforts will be opportunity-centric, not technology-centric. The county will focus on the goals and needs of the various operations and agencies, and align solution capabilities to those opportunities. Therefore, general requirements for technical solutions involve the ability to support business goals and operational opportunities.

Detailed information about the opportunities is contained in the Analysis Report for this project (available at http://www.metrokc.gov/oirm/projects/lsj.htm). The information in this section highlights selected items.

2.1 HIGH-LEVEL BUSINESS DRIVERS

In a survey conducted by the King County Office of Information Resource Management (OIRM), every agency identified data sharing as a short-term business issue. In general, the short-term business opportunity is to improve the sharing and migration of data from agency to agency, thus relieving redundant entry operations, improving data quality, and streamlining interagency communications.

As a long-term business issue, agencies believe that existing systems cannot support operational process improvements required to improve case management and control operational costs. The flexibility to alter, consolidate, or otherwise change any aspect of the case management workflow is the minimum required end-state for an integrated IT environment.

2.2 QUANTIFIED AND QUALIFIED OPPORTUNITIES

Based on an analysis of existing operations, King County identified several business opportunities that are more thoroughly documented in the Analysis Report. In summary, those opportunities revolve around six themes:

1. Eliminate the paper-based inter-agency sharing of information, thus eliminating redundant data entry, reducing errors, and improving timeliness.

2. Improve capabilities to access information from multiple sources in order to meet the needs of current activities.

3. Develop a common library that every agency could access, in order to develop new capabilities and services outside the scope of current operations.

4. Create an infrastructure that allows information from outside the county to be captured and retained, to support broader police and public safety issues.

5. Support collaboration regarding calendaring, scheduling, and management of court cases, to ensure compliance with various laws.

6. Ensure that King County can support and participate in broader integration initiatives managed by Washington State.

2.3 OTHER GENERAL REQUIREMENTS

The technical solutions must support general industry concepts related justice integration to ensure that King County can comply with current and future information sharing requirements imposed by the state and federal governments.

In April 2000, SEARCH, The National Consortium for Justice Information and Statistics, published a report called *Integration in the Context of Justice Information Systems: A Common Understanding* as part of a project sponsored by the Bureau of Justice Assistance. This report defines integration, and the goals of a judicial integration effort, in the following terms:

- Integration encompasses a variety of functions designed to enable the timely and efficient sharing of information within and between agencies.

- The primary objective of integration is the elimination of duplicate data entry, access to information that is not otherwise available, and the timely sharing of critical data.

Industry sources also provide a concept called the *foundation principles of integration* that identify four very basic elements of justice integration:

- Data should be captured at the originating point rather than trying to reconstruct it down line or have others capture it.

- Data should be captured once and used many times, leveraging existing resources and improving data quality.

- The integrated system should be driven by the operational activities of participating agencies, not separate.

- General functional capabilities of the overall solution should be constructed as global capabilities to allow for ease of change without impact to underlying systems (for example, additional automatic reporting can easily be implemented as additional requirements are identified)

3.0 EXPECTED CAPABILITIES

Interagency integration refers to the ability to access and share critical information at key decision points throughout the justice process. In general, there are five functional methods in which information is shared between agencies and/or their underlying systems:

- **Query** an information source, primarily to assess the status of a person or an event
- **Push** information from one agency to another, based on the actions of the originating agency and a pre-defined process to share the results from those actions
- **Pull** information from one agency to another, for incorporation into the records or systems of the recipient agency
- **Publish** information regarding people, events, or processing status, for others to access as desired
- **Subscribe** to a notification process that alerts the agency when some condition exists (such as a change in the status of data within another agency)

At this time, the county is anticipating the implementation of an integration infrastructure that complies with a "hub-and-spoke" architecture model. While it is understood that this direction may change as the county evaluates various alternatives and solution models, it is currently expected that in order to support the operational goals and integration methods, the "hub" must support four primary capabilities:

1. Application indexing
2. Data migration and exchange
3. Data warehousing
4. Web-based application development

Note: The following is a general explanation of the county's current understanding of these methods for accomplishing these capabilities. We welcome discussions that present alternative definitions, methods, or technologies that accomplish the same general goals and educate our staff about emerging industry options.

3.1 APPLICATION INDEXING

The indexing capability of the integration layer involves the extension of the current functionality and capabilities of the existing systems. There are two general descriptions for these types of activities:

- Object level integration (synchronous access) – Often using some object access technology like CORBA, COM, or J2EE to wrap logical functions or transactions, and then providing the ability for other applications to call those objects and obtain the results.

- Web Services – A similar model within the .Net model to expose an object as a service.

The indexing function may have varying levels of complexity, from automating a transaction and screen scraping the results, to more direct access to the application logic via adapters.

In all cases, the goal of this operation is to query and pull data from other applications as necessary, in order to use, update, or manipulate it for a subsequent activity, but often without the need redundantly capture and store data.

3.2 DATA MIGRATION AND EXCHANGE

Data migration typically involves the pushing or pulling of data from one application to another, based on business rules. These business rules are often defined based on documented workflow. The data may be passed automatically when processing during an upstream operation is complete, or pulled by a downstream operation. The primary difference between data exchange and application indexing is that, in a data exchange, the data is physically moved to the recipient application, to then be used independent of the originating application.

Based on various paradigms, such an exchange may involve asynchronous Message Oriented Middleware (MOM), Extract/Transform/Load (ETL) technology, or XML/EDI based data transfer.

3.3 DATA WAREHOUSING

Simply (and obviously) stated, data warehousing involves the creation of a separate repository based on data published from various sources, for access and use by the community. Users can publish and subscribe to information as it becomes available, and reconcile the accuracy of information, completely independent of other agencies' legacy systems.

A data warehouse creates flexibility in the way data is accessed and shared between agencies, as data can be retrieved as a transaction from the originating application, requested for transfer from the originating application, or accessed as available in the warehouse without involving the originating application. This removes inter-application dependency and better supports ad hoc data access and reporting across the entire LSJ operation, independent of the legacy systems.

In most solutions, the data warehouse may be nothing more than another application within the integrated environment. Data is published from the

originating applications following the same business rules and standards as a data migration activity.

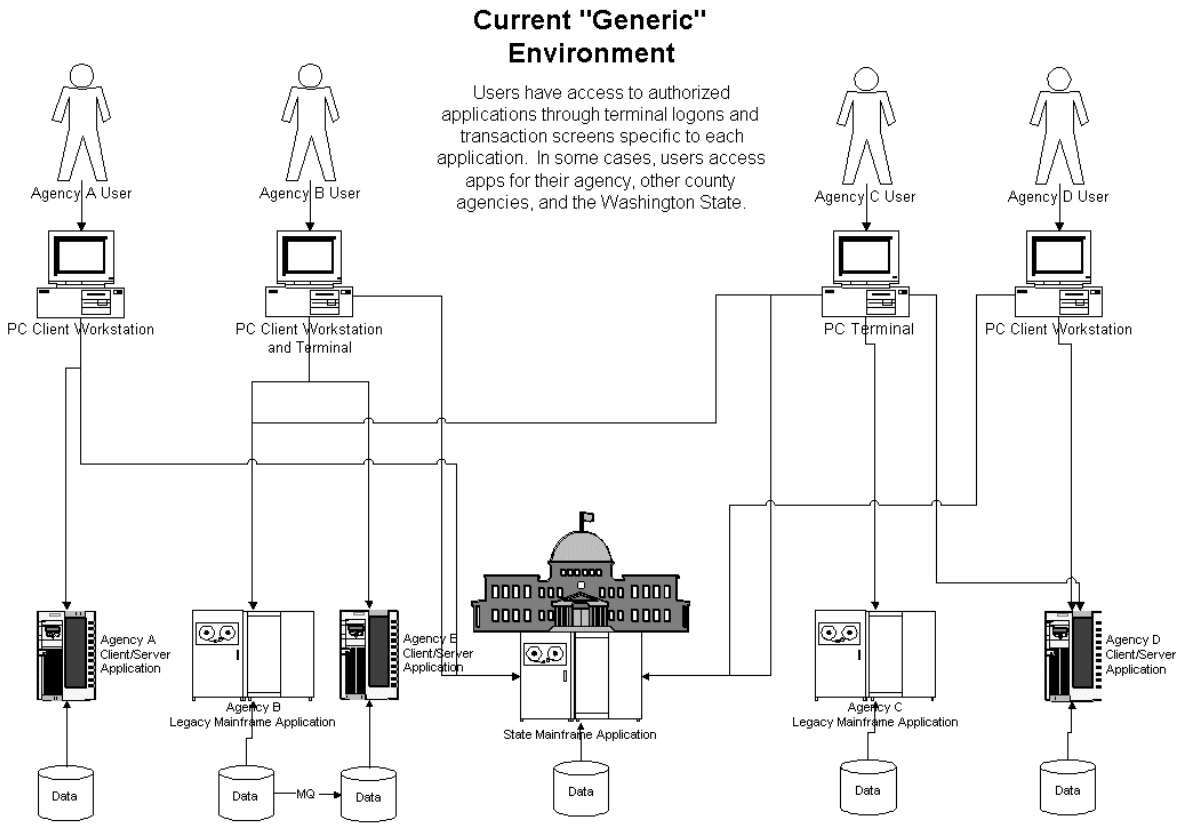
3.4 WEB-BASED APPLICATION DEVELOPMENT

A final capability of the integrated environment is an application development environment and tool suite that supports the independent development of new applications. Application can be built upon the capabilities of the legacy applications – borrowing business objects, transaction logic, and data, as applicable – while the legacy applications are still in place supporting daily operations.

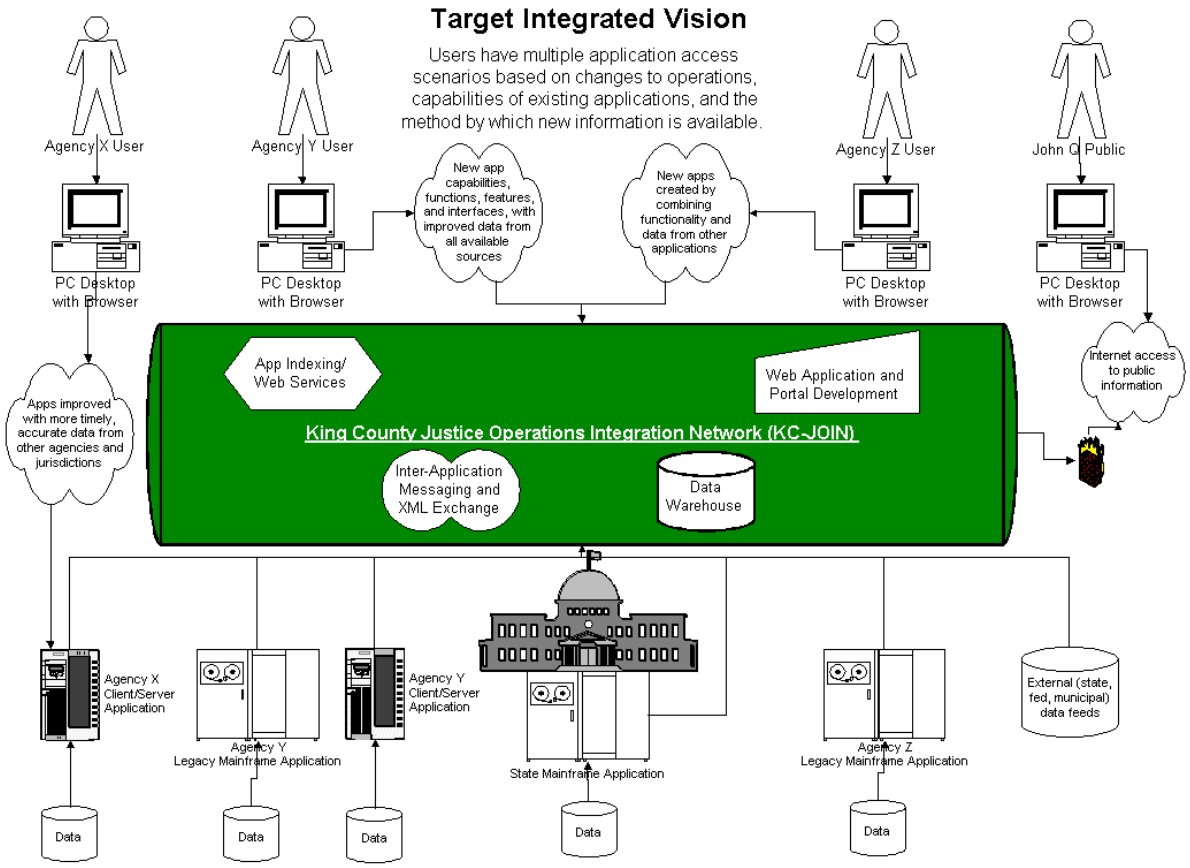
Since new transaction applications are built, the agencies have a chance to completely reengineer their operations. They can leverage the shared data, create new business rules to support new functions, and greatly improve efficiency and service. Over time, the need for the underlying legacy applications may be phased out as the business logic, processing, and data migrates to the new applications.

3.5 CONCEPTUAL ILLUSTRATIONS

3.5.1 Current Generic Environment



3.5.2 Integrated Environment



APPENDIX 1: GLOSSARY

BMC – Business Management Council. A council comprised of Directors and Elected Officials, created as part of the information technology governance structure under County Ordinance 14155.

CCN – Criminal Control Number. The primary key for identifying an individual within the SIP, SEAKING, and all interrelated applications within King County's detention systems.

COTS – Commercial Off The Shelf product. Refers to an IT application that is purchased from a vendor and implemented with (presumably) limited programming or customization required.

DAJD – Department of Adult and Juvenile Detention.

Data warehouse – A database application that typically stores data and information already retained in multiple disparate systems. The data warehouse consolidates the data into a central repository, reorganizes the data, and establishes new relationships between the data to support new applications or new decisions support and analysis functions.

DISCIS – DIStrict Court Information System. A state application used by King County District Court.

DJA – Department of Judicial Administration.

EAI – Enterprise Application Integration. IT industry term for the effort of integrating applications within an enterprise.

Enterprise – Any logical organization that comprises a "going concern." The term typically refers to an entire company (as opposed to a single department or division), but may also refer to a government organization, or multiple companies operating as a conglomerate or supply chain.

Gap analysis – An analysis technique for evaluating IT products based on the business and functional requirements of the customer or end users.

Horizontal integration – Within the justice industry, the integration of applications across multiple operations but within a single layer of government (for example, integrating the systems of King County's Sheriff, Prosecutor, Superior Court, and Detention units).

Hub-and-spoke – An integration architecture in which applications do not directly exchange information with each other. Instead, they exchange data only with a central system, which acts as a distribution and communications hub.

ITS – Information and Telecommunications Services.

Integration – Within the justice community, integration is defined as the electronic sharing of information by two or more distinct justice entities within a system. Within the IT industry, integration is the interconnection of two or more applications so that the applications share data, resources, or functionality.

JIS – Justice Information System. A Washington State application.

JJWAN – Juvenile Justice Wide Area Network.

JIN – Justice Information Network. The working community for Washington State's integration efforts.

LegalXML – Both the name of the standard for using XML within the law and justice industry, and the name of the organization that developed and manages the standard.

Legacy – Broadly speaking, a legacy application is any application that is not currently under development and currently supports production operations. The term is usually applied to "old" applications that are: a) based on a mainframe or midrange platform; b) written in "older" computer languages like COBOL, Natural, FORTRAN; c) are designed to support only point-to-point interfaces; d) use flat file records rather than relational databases; and/or e) were originally intended to be accessed using "dumb" terminals.

Legacy extension – IT industry term for any of a variety of activities that, in the end, result in the continued use of a legacy system while presenting to the user a browser-based "web" interface accessed from a PC.

LSJ community – The collection of agencies and departments that make up the King County "Law, Safety and Justice" operation. It includes the King County Sheriff, the King County Prosecutor, Superior Court, District Court, the Department of Judicial Administration, the Department of Adult and Juvenile Detention, and the Office of the Public Defender.

Middleware – Software that manages the interaction between disparate applications across the heterogeneous computing platforms. There are many different types of middleware solutions, based on the goal of the interaction between applications.

MQ – A type of middleware software, produced by IBM.

NCIC – The federal government's criminal information application.

OIRM – Office of Information Resource Management.

PAO – Prosecuting Attorney's Office.

PCN – Process Control Number. The primary key for identifying event-related information within Washington State's justice systems.

PDO – Public Defender's Office.

Point-to-point – An integration architecture in which applications directly exchange information with each other. This is a simple method for quickly achieving direct connection between applications, but becomes complex and difficult under a many-to-many integration scenario.

Powerbuilder – A development tool from Powersoft, used to build application interfaces within a client/server environment.

PROMIS – PROsecutor Management Information System. The core application used by the King County Prosecutor's Office.

Protocol – A set of formal rules describing how to transmit data. Low-level protocols define the electrical and physical standards to be observed. High-level protocols deal with the data formatting, sequencing of messages, etc.

RDBMS – Relational DataBase Management System. A relational database allows the definition of data structures, storage and retrieval operations, and integrity constraints. In such a database the data and relations between them are organized in tables. A table is a collection of records and each record in a table contains the same fields.

ROI – Return On Investment.

SEARCH – A non-profit organization, also called The National Consortium for Justice Information and Statistics. It is a research group funded primarily by grants from the Office of Justice Programs, within the U.S. Department of Justice.

SEAKING – A DAJD application that contains demographic information of every person processed within the King County detention unit. It was originally acquired from Kansas City circa 1971.

SIP – Subject In Process. The core application used by the King County Department of Adult and Juvenile Detention.

SAC – Strategic Advisory Council. A council comprised of Directors and Elected Officials, including the King County Executive, created as part of the information technology governance structure under County Ordinance 14155.

SOP-2 – Summary Offender Profile, Release 2. An application currently under development by Washington State.

Superform – A document created by a law enforcement agency to provide information to the jail and refer a case to the King County Prosecutor.

SWOT – Strengths, Weaknesses, Opportunities, Threats. A structured method of analyzing business opportunities based on four criteria.

Vertical integration – Within the justice industry, the integration of applications across multiple layers of government but within a single function (for example, integrating the systems of Seattle Police, King County's Sheriff, and Washington State Patrol).

WACIC, WASIS, SOR – Various applications used by Washington State.

W3C – World Wide Web Consortium. The main standards body for the World Wide Web. W3C works with the global community to establish international standards for client and server protocols that enable on-line commerce and communications on the Internet. W3C was created by the Massachusetts Institute of Technology (MIT) on October 25, 1994.

XML – eXtensible Markup Language. A standard developed by the W3C for exchanging data. It is based on creating definitions for data tags, tagging data according to those definitions, and transmitting the tagged data as text files.